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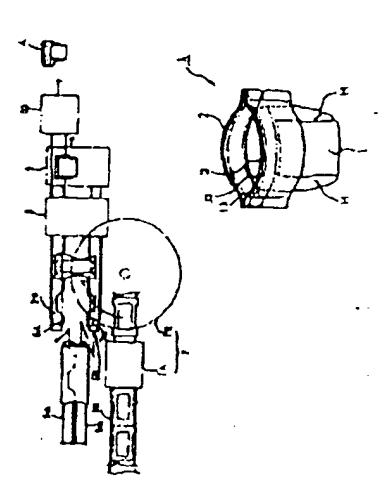
(54) MANUFACTURE OF BRIEFS TYPE DISPOSABLE
DIAPER

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(57) Abstract:

PURPOSE: To reduce costs by enabling an automatic large-scale production method by forming a back body wrapping part and front body wrapping sections to place a diaper main body thereon orthogonally and to bond it thereto.

CONSTITUTION: Optional stock is selected for a back body wrapping section and front body wrapping sections (2 and 3) independently of diaper body 1. In other words, the diaper body 1 is relayed to a turning transfer device 7B behind a suction conveying device 7A and the diaper body 1 is turned by 90° to be supplied to a specified position between belt bodies 2a and 3a of both body wrapping sections perpendicular thereto. Then the diaper body is conveyed to a bonding means 8 to bond it integrally with the belt bodies 2a and 3a of both body wrapping sections. Thereafter, the assembly is conveyed to a folding means 9 to be folded double and side ends of the belt bodies 2a and 2b of both the body wrapping sections are cut while being bonded by a bonding/ cutting means 10.



full translation attached
no equiv. outside jason

Translation of

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Title of the invention Brief-type disposable diaper production
method

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Specification

1. Title of the invention

Brief-type disposable diaper production method

2. Scope of the patent claim

A brief-type disposable diaper production method involving

a process whereby a water-absorbent material is inserted between an outer sheet and an inner sheet to form a diaper body; a process whereby a front waistband and a continuous back waistband having an elastic member at least at the side is formed;

a process whereby the diaper body is overlapped and adhered to both waistbands in the transverse direction;

a process whereby the diaper body is folded double and both waistbands are brought into contact; and

a process whereby the contacted waistbands are cut to prescribed dimensions and the regions near the cuts are adhered to integrate the waist parts at the edge portions

to produce a brief-type disposable diaper from a diaper body and a single waistband.

3. Detailed description of the invention

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Field of industrial use

The present invention relates to a brief-type disposable diaper production method.

Prior art

Known technology relating to this type of brief-type disposable diaper production method is disclosed in Japanese Unexamined Patent Application Number S57-77304: "Diaper-brief and Production Method Therefor".

Problems to be overcome by the invention

The abovementioned technology is disadvantageous in that as there is a cut-out portion in order to form an opening for the wearer to insert his/her legs, it is necessary to add a process for forming the cut-out portion, which raises production costs.

Means of overcoming the abovementioned problem

The present invention overcomes the abovementioned problem of the prior art and allows the production of brief-type disposable diapers by an automated large-scale production method involving a process whereby a diaper body is formed; a process whereby a back waist part and front waist part are formed; a process whereby the diaper body is overlapped and adhered to both waist parts in the transverse direction; and a process whereby the diaper body is adhered and integrated.

Embodiment

The present invention is described in detail based on the embodiment shown in the following drawings.

Figures 4 through 6 show an example of a brief-type disposable diaper produced according to the present invention: 1

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represents the diaper body, formed by inserting absorbent material 13 between outer sheet (for example, a water-impermeable P.E. sheet) 11 and inner sheet (for example, water permeable nonwoven cloth) 12.

2 is the back waist part and 3 is the front waist part, and the material for both waist parts 2 and 3 may be selected independently from the material for diaper body 1, although in this embodiment, the same material is used; the double layer having P.E. sheets 21 and 31 as the outside and nonwoven cloth 22 and 32 as the inside is formed, an elastic member sheet (for example, a polyurethane sheet) 23 and 33 is inserted into part thereof, so that at least the upper edge is expandable. It should be noted that it is also possible to have a single layer elastic sheet, to form a completely expandable construction. It should be noted that as waist parts 2 and 3 are preferably of an air-permeable material, it is desirable either to take the nonwoven cloth and elastic sheet, and exclude the P.E. sheet, or, when a P.E. sheet is used, to puncture a plurality of small holes therein. It is also possible to totally or partially affix the elastic member (rubber thread, rubber tape or the like) to a sheet of suitable material, to form an elastic sheet.

Moreover, the hole parts H for the insertion of the wearer's legs are dictated by the width and shape of the diaper body 1 and the width and shape of waist parts 2 and 3, and generally, the shape is such that the holes are toward the front side.

The brief-type disposable diaper production method of the

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present invention will be described below with reference to Figures 1 through 3.

Figure a shows the diaper body 1 production process: absorbent body 13 is placed on outer sheet (back sheet) 11 supplied from outer sheet roller 11a, then inner sheet (top sheet) 12, supplied from inner sheet roller 12a, is supplied thereon, to achieve a sandwich-like insertion of absorbent body 1 between outer sheet 11 and inner sheet 12; then this is transported by the first conveyor device 4 to adhering-cutting device 15, and the circumference is firmly adhered by adhering-cutting device 15, or adhered with adhesive, then cut to the required shape. It should be noted that this process is the same as known diaper production processes, and it is possible to employ a conventional production line for disposable diapers.

It should be noted that the adhering-cutting device 15 comprises two stages: first unit 15a and second unit 15b. In first unit 15a, only adhesion and the cutting of cut-away parts P proceeds, to continuously form diaper body 1, then diaper body band 1a is transported to the next process, and may be cut crosswise to the required dimensions by second unit 15b when in the vicinity of the waistbands 2,3-adhesion process.

Moreover, as there are no cut-away parts P when diaper body 1 is long, it is also possible to achieve the aims of the present invention by only adhering in first unit 15a, then cutting in second unit 15b.

There are various possible shapes for the cut-away parts P, and the shape can be selected according to the shape of the

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waistband 2,3 and the desired shape of hole parts H.

Figure 1(b) shows a waistband 2, 3 production line: elastic member sheet 23a, supplied by elastic member sheet roller 14, is cut along a continuous S-shaped cutting line in the central portion by cutting device 24 to form a pair of bands, back waistband 2a and front waistband 3a.

It should be noted that in the case of the multilayer constructions shown in Figure 3 (outer sheet (P.E. sheet) and elastic member sheet, inner sheet (nonwoven cloth) and elastic member sheet, or outer sheet and elastic member sheet-inner sheet), if elastic member sheet 23a is a band of the same width, and only part of sheet 21a, 22a is adhered, the elastic member sheet can be used effectively without cut-away parts, and holes of the desired shape can be found by selecting a suitable shape for waist part 2,3.

Figure 1(c) integrates the diaper body 1 process of Figure 1(a) and the waistband 2a, 3a process of Figure 1(b), to show the brief-type disposable diaper-forming process: the second conveying device 5a, 5b for waistbands 2a, 3a extends to become the third conveying device 6A and the force conveying device 6B.

Diaper body supply means 7 comprises suction conveying device 7A and rotation conveying device 7B, such that suction conveying device 7A for conveying the diaper body 1 that has been cut to the required dimensions is provided at the end of the first conveying device 4, after which diaper body 1 proceeds onto rotation conveying device 7B, then rotation conveying device 7B rotates the diaper body 1 through 90°, to supply diaper body 1

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transversely to a prescribed position on waistband 2a, 3a.

It should be noted that rotation conveying device 7B receives the diaper body 1 on the conveying surface of suction conveying device 7A then supplies it by rotating 1/4 of a rotation while suction continues, then rotating the diaper body 1 that is between third conveying device 6A and fourth conveying 6B through 90°, and diaper body supply means 7 can achieve the aim by means of a suitable conveying means as follows: the adsorption surface of the diaper body is rotated through 90° according to the rotation of a suction rotation drum provided so as to be continuous with suction conveying device 7A, then the diaper body proceeds to a suction conveyor belt, whereupon it is conveyed in a transverse direction with respect to the conveying devices, thereby allowing diaper body 1 to be supplied between waistbands 2 and 3.

Diaper body 1 is then conveyed to adhesion means 8 and adhered to waistbands 2a, 3a by a suitable adhesion means such as an adhesive or heat seal.

It is then conveyed to folding means 9, and folded double by said folding means 9 to superimpose front waistband 2a and back waistband 3a.

The sides of the superimposed waistbands 2a and 2b are adhered and cut to the required shape by adhering-cutting means 10, to yield brief-type disposable diaper A.

Advantages of the invention

The present invention yields a brief-type disposable diaper by adhering and integrating a pair of waistbands and a

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diaper body and cutting to the required dimensions and so conventional diaper production lines can be used for the diaper body, the waist parts are supplied as bands and automated mass production is possible due to a belt conveying device, so the brief-type disposable diapers can be effectively produced at extremely low cost.

4. Brief description of the drawings

Figure 1 is an explanatory diagram for the brief-type disposable diaper production method of the present invention: Figure (a) shows the diaper body production process, and Figure (b) shows the waistband-integrating process.

Figure 2 is a diagram of the diaper body, and Figure 3 shows the front waist part and back waist part.

Figure 4 shows an oblique view of a brief-type disposable diaper produced according to the present invention, Figure 5 is plane view and Figure 6 is a cross-sectional view of the diaper body.

- 1 Diaper body
- 2 Back waist part
- 3 Front waist part
- 7 Diaper body supply means
- 8 Adhesion means
- 9 Folding means
- 10 Cutting means

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Patent attorney

S. Okumura

送审稿3-170053 (2)

川をいきてまごつを出し、又又舟頭の上に舟を出
させ給ひるのである。

935

以上は圖面に示す実験室にむとづいて、本実験を
実現する。

2は背面側面の部、3は前面側面の部であり、
背面側面の部2-3は、それぞれ本体1とは独立して
任意の角度を調節することができる。前面側面ではこれら2部
は1と同様の操作を実現し、内側モード、シートモード、シート2モード、シート3モード、内側モード2モード、シート2モード2モードとする二
次元面とし、その一方に異性磁石シート（例えは、
ポリウレタンシート）23-24を読み込み、少
なくとも上端部においては内側面のある面とし
た。24は異性磁石シートの厚度測定とし金属部

電シート上などに組み込んだ後、直角状の
壁の上に両側面と底面同様により接着し、接着
部の内側にもとり周囲部を接着し、または接着
部で接着して底面形状に切替する。又は、公知の
二つの装置工法と同様であり、底面の組合せて
ある二つの底面21を接着することにてある。

され、開口の開閉をもと、同じユニット15
と第2ユニット13との2台用尺とし、第1
ユニット13では内筒とともに可動底部分の切
断の点を行なって、底板はおひつ状にして用尺
して、おひつ本体ははいと底板に取り込ん
て、第2ユニット13により底板方向に用尺す
る所に用開してもよい。

また、各社の本社との取扱を販売形態とする場所は、販売部分とが年をしないので、同じユニットとしてでは販賣の本を行き、またユニットとしての販賣することにより販賣を達成することがあります。

୧୮. ପାଇବାର ପରିବାର, ପରିବାରକୁଳ

に加えてあるは區としてよいことは何事でも
ある。されば、萬葉四十九葉2・3は、萬葉の入る
所が美しいので、P. E. シートを用いて不規
則と規則性のシートとするか、P. E. シートを
用いる場合には多次の小孔を穿通させることが
美しい。28. 海底の草原シートに、アムモナイト、アラモナイト、
アラモナイト全頭部はいに規則性を保つて規則性シートに付けてある。
最初にあたりは区の見を付けていたの140
度2は、おもつては1の山地より山地の風景と、
萬葉四十九葉2・3の山地より山地の風景にこなれ
てされ、一概的に萬葉外に向ひ開口する形はと
く

次に、第1回乃至第2回を参照して、本章に
上るアリーフが成り立たなかつた場合を想
てみる。

6回は、8回は8枚もの内張り用紙を用い、内張
シートロール1枚より構成されると内張シート
(バックシート)1枚上に、8枚目1枚を重ねし、
その上に、内張シートロール1.2mより構成され
る内張シート(トップシート)1枚を重ねて、
アンダーフラット板に接着する内張シートとして用

2・3の結果より用意する場合の目的に
より用意する場合の目的をもつた。

第一回の6回目、明鏡団の魔羅女郎2・3の魔羅女郎を用意し、明鏡団シートロール1・4より
改良された明鏡団シート2・3の明鏡団2・4
に上りのやや変形の魔羅女郎魔羅女郎にての番して
片の魔羅女郎を形成し、一方を背面側振り等は6回
などに明鏡団を用意魔羅女郎魔羅女郎とする。

なが、第3回に示すごとく、内質シート（P.
E.シート）と内質紙板シート、内質シート（不
織布）と内質紙板シート、また紙板シートと内
質紙板シート内質シートとの多層複合とする場合
には、内質紙板シートを同一市の複数供給
者とし、内質紙板シートを数量的に均等割合を
定むることなく）使用がでも、且つ同一の第3・
4の形状を任意に選択し、第3の形状の開口部を
開設することによって操作的である。

先に書いたのは、中国のやり方にして、日本
のやり方を日本語で書いたものである。一括して、

桂廣平J-17G05J (3)

アリーフルルイコヌスCつとTる工作を示し、ひ
ロム英國ウニヨン政府24・30の第2回辯論會
e・30を以てして第3回辯論會はアメとヨリ
辯論會第68とする。

とき、東洋音楽研究者たるは吸引樂器研究者の立場上のおせつ本は1を主行なり。吸引しつつ1ノ4回転して吸引樂器研究者た人と多く吸引樂器の間におせつ本は1を80度回転させて興味するものであるが、吸引樂器研究者た人に回転して吸引樂器ドラムを打けてドラムの回転に伴っておせつ本の吸引器を回転させてその吸引器を止めたのち吸引器ベルトに引導する吸引器ベルトを回転器と吸引器を回転して、X8882

ので実現されることで、ベルト駆動方式による大容量の蓄電池をとることができて、それまでのコストでブリーフがいなくて済むのを実現できた
結果になります。

1. 日本の歴史と風土

第1回は本見面によるブリーフ解説いきで第2回の本題が詰めせず見面解説で、3回はおむねの質疑工作、4回は問題の質との一区化工作用をそなえておこなう。

第2回は89つ本ほの復讐篇、第3回は89つ本ほの復讐篇

第三回は本発明により製造されたアリーフが使
い口とおのづの頭部、第三回は平頭頭、第三回
はおのづの頭部である。

1を販賣する権利は第2・3項に規定するもの
であり、ビニコスは新規手段では通常の販賣手
により販賣を達成することができる。

次に角を平野部へ通過した後、ヒートシール、
花崗岩の道筋の角を平野により、それは出でつて
を何どう田々無用なほ20・30と見度して一
RTS.

そののち、所定の手配をへて送り、其の後も手配により二所に分けて前回開催の展覧会は

電力会社でた販賣回り額度は概24・25の内
H度を、月を以て原平均により徴収するととも
に、販売料金に併算して、ブリーフ封筒に附て
記入する事である。

87005

10 — 可視手稿

俄国人 民族公社 用 元

代理人 奇士 威利 文司

1-88246

2-1-1 賽樂四 2 頁

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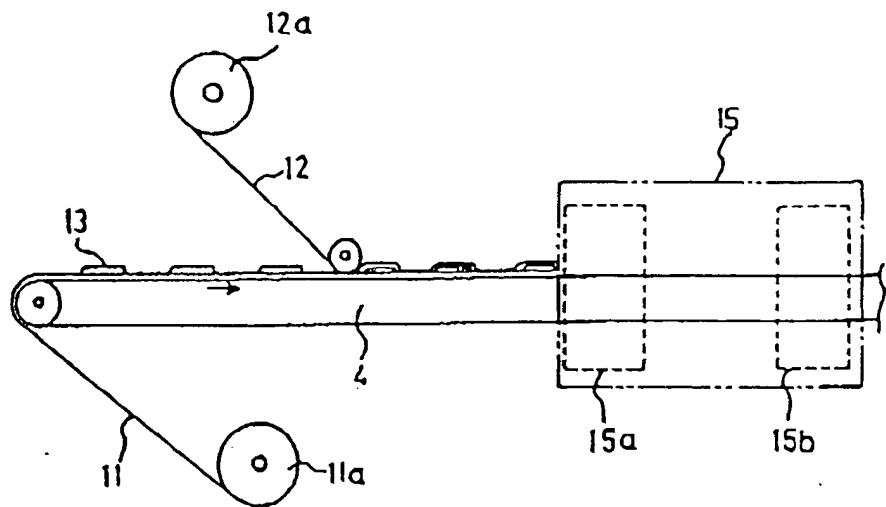
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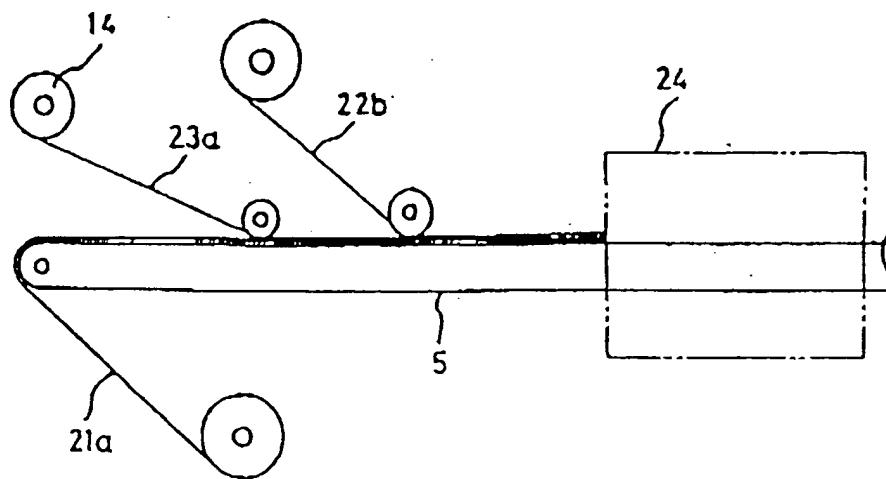
9--新嘉坡

特開平3-176053 (4)

第1図 (a)

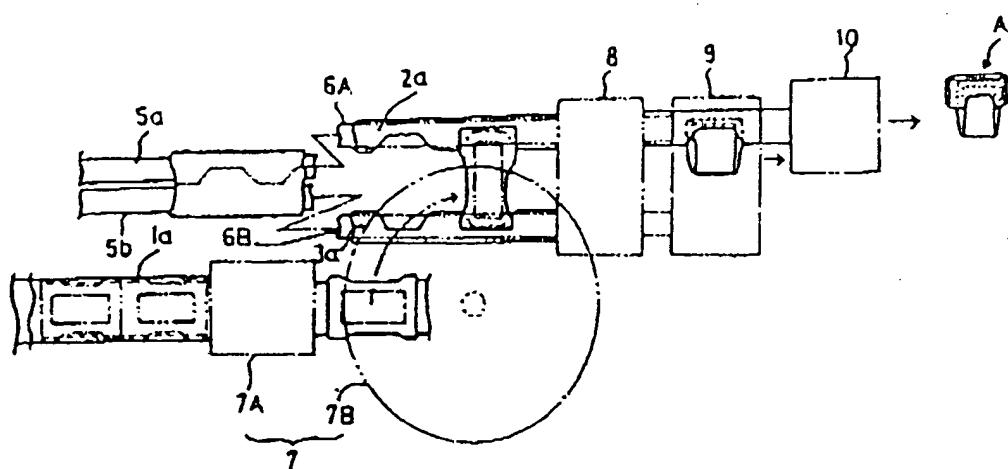


第1図 (b)

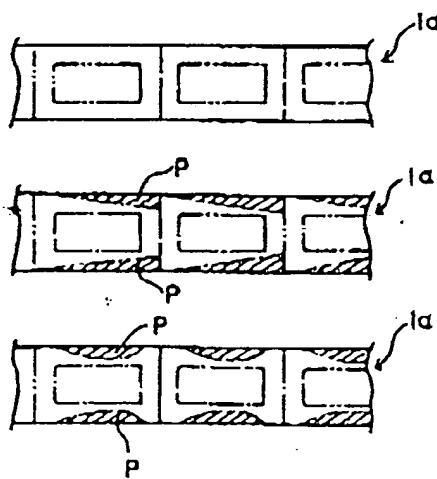


特開平3-176053(5)

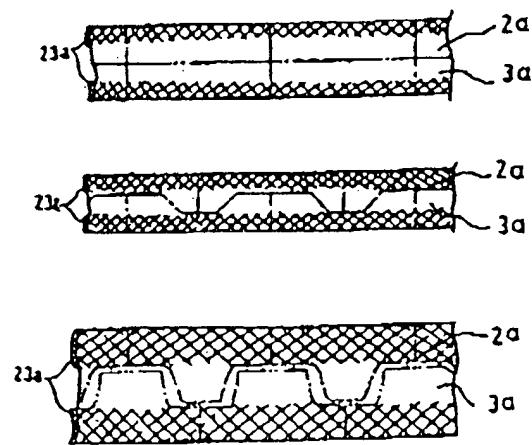
第1図 (C)



第2図



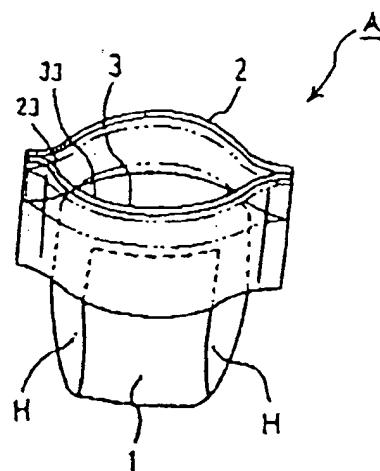
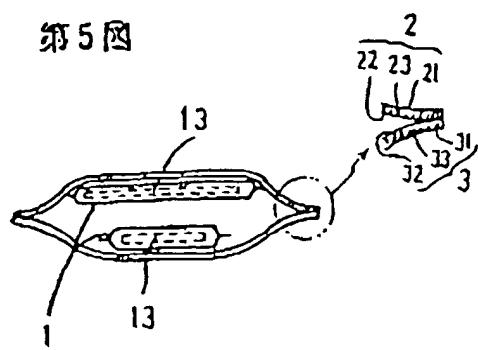
第3図



特開平3-176053(6)

第4図

第5図



第6図

